○ Discover

Research

Reconsidering reappraisal: in emotionally intense contexts, people choose distraction or minimizing over reconstrual to regulate others' emotions

Vicky Xu[1] · Kit S. Double[1] · Carolyn MacCann[1]

Abstract
Prior research has established that people use reappraisal to regulate others' emotions in higher-emotional intensities but use distraction in lower-emotional intensities. However, research has not compared different reappraisal subtypes, such as reconstrual versus minimizing. In three pre-registered studies, participants completed a novel advice-giving task where they selected regulation strategies (distraction, reconstrual, or minimizing) to help a 'partner' who was ostensibly experiencing stimuli of differing emotional intensities and types (the partner was, in fact, non-existent). In Experiment 1, participants selected reconstrual over distraction significantly more for low versus high intensity stimuli. In Experiment 2, participants showed no significant preference for minimizing over distraction on low versus high intensity stimuli. In Experiment 3, participants selected reconstrual over minimizing significantly more on low versus high intensity stimuli. Results indicate that previous findings regarding the effect of emotional intensity on 'reappraisal' preference are limited to reconstrual and may not generalize to other reappraisal subtypes (i.e., minimizing) which require lower cognitive costs and emotional engagement with the stimuli.

Extrinsic emotion regulation refers to the strategies people use to influence the type, intensity, duration, or expression of someone else's emotions [15, 28]. For example, a reappraisal strategy involves changing one's interpretation of a situation to reduce its emotional impact, whereas a distraction strategy involves shifting attention away from the emotion-eliciting elements of the trigger [38]. It is known that people adapt their use of extrinsic emotion regulation strategies based on situational variables such as the intensity and type of emotion the target is experiencing [8]. In particular, people may prefer distraction over reappraisal to regulate others experiencing high-intensity negative emotions [24].

To date, the vast majority of emotion regulation research has examined how people regulate their own emotions (intrinsic regulation), hence little is known about how people regulate others' emotions (extrinsic regulation) [28]. Emotion regulation is a core topic of interest across many psychological disciplines (e.g., cognitive, personality, industrial-organisational, and clinical) [15]. For example, there are cognitive behavioural therapy (CBT) based methods in couples therapy such as Couples Coping Enhancement Training which aim to improve the couple's ability to engage in reconstrual [36]. This in turn can reduce emotional stress, enhance relationship satisfaction, and improve adaptive extrinsic regulation abilities [20, 36]. In high-intensity occupations, emergency medical service professionals were found to regulate

---

✉ Vicky Xu, vicky.xu@sydney.edu.au; Kit S. Double, kit.double@sydney.edu.au; Carolyn MacCann, carolyn.maccann@sydney.edu.au |
[1]School of Psychology, The University of Sydney, Sydney, Australia.

distressed witnesses via distraction and reconstrual in a simulated medical emergency [53]. Hence, the burgeoning field of extrinsic regulation research provides fruitful applications when implementing the improved theoretical understanding of how people regulate other's emotions in different relationship dynamics and workplace domains.

Furthermore, there is a lack of research into reappraisal subtypes in extrinsic regulation contexts. There is emerging intrinsic research indicating that reappraisal subtypes can be distinguished in terms of the degree of cognitive effort involved [22, 44]. Hence the present study pioneers this gap on extrinsic reappraisal subtypes by comparing minimising and reconstrual preferences as the direction of preferences has not yet been established.

The current study advances the understanding of extrinsic regulation by exploring whether emotional intensity and the type of emotion in a regulation context affect extrinsic strategy preference of the different subtypes of reappraisal—minimizing and reconstrual—in different ways.

1 Emotion regulation strategies

Prominent models of emotion regulation such as the Extended Process Model (EPM) [15] embed strategy selection within a broader context whereby regulators: (1) *identify* a need to regulate the target: (2) *select* regulatory strategies, (3) *implement* those strategies as context-driven tactics, and (4) *monitor* its effectiveness. See the Supplementary Materials for a more comprehensive overview of the EPM stages. The EPM proposes that regulators select strategies depending on: (a) the features of the target's emotion based on the context (e.g., **emotional intensity** and **emotion type**) and (b) a **cost–benefit analysis** of using that strategy by weighing its *cognitive costs* and perceived context-specific *effectiveness* for the target [39]. A theoretical assumption that underlies this model is the *functional approach,* where people select strategies that are *effective* for achieving context-specific regulatory goals [46].

We focus on the use of three specific emotion regulation strategies (distraction, reconstrual, and minimizing) for regulating others' emotions. A meta-analysis of 190 emotion regulation studies found these three strategies were the most effective for regulating negative emotions [56]. However, previous studies have typically failed to differentiate between the reappraisal subtypes and have conflated the reappraisal strategy category to reconstrual subtype only [9]. The reappraisal strategies are classified as *cognitive change* strategies as they entail changing the cognitive appraisal of a situation's meaning to alter the emotions elicited (see Supplementary Materials for more information about strategy classification) [16]. A recent intrinsic regulation study by Zhao et al. [57] proposed a theoretical distinction between two reappraisal subtypes which are both effective at reducing negative affect—*reconstrual* and *minimizing*.

1.1 Distraction

Distraction is an *attentional deployment* strategy as it involves the regulator encouraging the target to divert their attentional focus away from the emotional trigger during the early stages of regulation [28]. For example, the regulator may encourage a friend to shift their attention to something other than their upcoming stressful exam. Unlike reappraisal, distraction does not require the regulator or the target to engage deeply with the emotional or cognitive content of the distressing trigger [31]. Distraction appears to be effective across a wide range of emotional contexts [41].

1.2 Reconstrual

Although there are multiple forms of reappraisal, most studies referring to 'reappraisal' operationalise it narrowly as only reconstrual [54]. Reconstrual entails the regulator helping the target change how they interpret the situation to reduce their negative affect [54]. For example, the regulator may reassure the target that a friend was not ignoring them personally but was unresponsive as they were busy.

Reconstrual is a highly challenging form of *cognitive change*, as to reinterpret an emotional trigger the regulator must guide the target to analyse the stimuli's distressing content directly and discover a more positive meaning associated with it [10, 55]. Despite its difficulty, reconstrual is the most commonly studied subtype given its ability to reduce physiological indicators of arousal and self-reported negative affect [1]. It is highly adaptive for long-term coping as people develop an understanding of the trigger's meaning [39].

1.3 Minimizing

The conceptualisation of minimizing (and other reappraisal subtypes generally) as a *cognitive change* strategy has been fragmented within the emotion regulation literature. Even across studies with similar operationalisations, researchers have labelled the minimizing subtype differently including: detached reappraisal [47], self-focused regulation [29], or distancing [21]. Some studies operationalise minimizing by focusing on the technical parts of the stimuli and remaining objective [2], detaching oneself and focusing on the non-emotional features of the situation [44], reducing the perceived significance of the outcome [57], or interpreting the events as tolerable [48].

The present research conceptualises minimizing by synthesising what is proposed by Shiota and Levenson [45] and Zhao et al. [57] in addition to integrating findings of previous studies naming the strategy differently but using equivalent operationalisations. Unlike reconstrual, which involves benefit-finding, minimizing focuses on establishing psychological distance from the emotional impact of the event to reduce the trigger's perceived personal significance [44, 57]. For example, the regulator may help a friend re-evaluate a recent conflict as neither significant or meaningful enough to warrant emotional distress and continued worry.

Adjacently, a self-regulation study by Moodie et al. [26] has proposed minimising is the midpoint between distraction (attentional deployment) and reconstrual (cognitive change). The underlying cognitive mechanisms of minimising has substantial overlap with both strategies, it employs both attentional shifting processes akin to distraction in addition to cognitive distancing from the initial emotional engagement and interpretation of the trigger as a cognitive change counterpart to reconstrual [26, 41]. These findings reiterate the amount of cognitive effort involved in reappraisal differs by subtype — minimising involves much lower cognitive effort than reconstrual. This may in turn affect one's strategy preference when regulating others' emotions across different contexts.

2 Contextual factors that affect strategy selection

2.1 Emotional intensity

Emotional intensity is a key contextual factor that impacts strategy selection [8]. This is affirmed by a recent meta-analysis which highlighted that the emotional intensity of a context is reliably linked to emotion regulation choices [23, 24]. A recent extrinsic study by Matthews, Webb and Sheppes [24] found participants preferred distraction over reconstrual to regulate others experiencing high-intensity negative emotions. Matthews, Webb and Sheppes [24] propose this preference occurs as distraction reduces emotional intensity by stopping the build-up of emotional information processing in the early stages of regulation. Additionally, Gross [15] suggests that people may not have the cognitive capacity to reappraise at high intensities, due to the compounding cognitive demands of the *strategy* (reappraisal is more cognitively taxing than distraction) and the *situation* (high-intensity situations are more cognitively demanding than low-intensity situations).

The present research builds on the advice-giving paradigm of Matthews, Webb and Sheppes [24] in two ways. First, we extend the comparison of strategies to include *minimizing* as well as reconstrual and distraction. Minimizing targets the emotion for regulation earlier in the temporal process, occurring between attention deployment and cognitive change [26]. Second, we explore contexts where regulators do not need to expend their own cognitive and emotional resources to regulate their own responses.

Matthews, Webb and Sheppes [24] showed the affective images to both the regulator and target concurrently. The regulator was thus required to regulate both their own emotions and those of the target. In the present studies the regulator will not need to regulate their own emotional response. This ensures that the regulator's strategy choice is not confounded with their own emotional bandwidth for processing emotionally intense stimuli. It will also enable the regulator to select a strategy based on its *perceived effectiveness* for helping the target whilst considering if the effort requirement would limit its context-specific effectiveness (cost–benefit analysis of the EPM selection stage). This assumption aligns with the functional approach underlying most of the emotion regulation literature, where people select strategies that are effective for achieving context-specific regulatory goals [46]. In the present research, the regulator has the pro-hedonic regulation goal of helping the target feel better. Hence, we expect regulators to choose strategies based on how effective they believe it will be in improving the target's emotions, how emotionally or cognitively challenging it is for the target to use, and by considering the emotional context.

2.2 Emotion type

Existing research has mostly examined regulation for broad negative affect whilst neglecting how discrete emotions may elicit different strategies [58]. We explore sadness and anger as they are the most commonly regulated emotions [6]. Given the gap in literature exploring discrete emotions, it is necessary to consider adjacent intrinsic emotion regulation studies for empirical evidence.

There is a theoretical gap in the literature which explores strategy choice for regulating broad negative affect and not discrete emotions [1]. This fails to reflect everyday instances where people experience specific emotions at varying intensities and these specific contexts may influence strategy preference [6]. Intrinsic research shows people prefer distraction to down-regulate anger [35]. Since anger diminishes cognitive processing which renders reconstrual difficult to adopt [34]. Conversely, extrinsic literature suggests reappraisal is preferred for regulating sadness which has a slow wave-like trajectory that does not exacerbate emotional intensity (unlike anger) [39].

3 The current study

This novel research addresses multiple gaps in the emotion regulation literature including the limited investigation into extrinsic regulation, the regulation of specific emotions beyond general negative affect, and the distinction between reappraisal subtypes (reconstrual versus minimising).

This research is methodologically distinctive from previous work as the regulator does not see the images, to emulate extrinsic regulation settings where the regulator *is not experiencing the emotional trigger themselves* or to the same extent as the target. In these instances, the regulator has more cognitive resources to allocate for selecting which strategy to use to help the target in emotional disequilibrium. For example, you may be regulating a friend still angry after an argument with their romantic partner.

The novelty is further enhanced by the current research advancing beyond the common methodological limitations of previous emotion regulation studies. The present research adopts a within-subjects design which benefits from increased statistical power, and reduced sampling error [52]. As many extrinsic regulation studies rely upon young undergraduate samples (which are often predominantly female), those findings are likely skewed towards regulatory preferences of younger, educated samples and cannot be extrapolated to older samples and those without tertiary education [44]. The present research overcomes these limitations by using an online research platform which enables the recruitment of a wider range of ages, educational attainment, ethnicities, and a more even split of sexes to facilitate better representativeness.

The current research also uses an innovative advice-giving experimental paradigm by extending upon previous image-based emotion regulation studies where participants respond to negative images by using different strategies [1, 24]. This paradigm is used to manipulate the emotional context (type and intensity) experienced by a *target person* (a person receiving the regulation efforts of the *regulator*), to draw causal conclusions about the impact of context on extrinsic strategy preference. For strategies, we consider whether participants prefer (a) distraction over reconstrual (Experiment 1); (b) distraction over minimizing (Experiment 2); and (c) minimizing over reconstrual (Experiment 3).

4 Experiment 1

4.1 Experiment 1 Introduction

Experiment 1 endeavours to clarify and replicate extrinsic studies that found distraction is preferred for low-emotional intensity but reconstrual is chosen more in high-intensity contexts [24]. We will also explore emotional intensity in sadness and anger eliciting contexts as they are the most frequently down-regulated negative emotions and the influence of intensity may differ across discrete emotions [47].

Given the limited extrinsic research regarding whether different strategies are more commonly used in certain emotional contexts, Experiment 1 aims to investigate the preference for reconstrual or distraction strategies in contexts that are low or high emotional intensity and that elicit sadness or anger in the target. Hence, we aim to explore whether

strategy preference differs at more nuanced levels to better reflect instances of everyday regulation, where the regulator is helping a target that is often experiencing an interaction of a specific emotion at a high or low-emotional intensity rather than a broad negative emotion.

4.1.1 Hypotheses

H1 (emotion type) Compared to the anger condition, the sadness condition will produce greater strategy preference for reconstrual over distraction.

H2 (intensity) Compared to the high emotional intensity condition, the low emotional intensity condition will produce greater strategy preference for reconstrual over distraction.

H3 (interaction: emotion x intensity) Greater emotional intensity will increase the effect of emotion type on strategy choice, such that the greater preference for reconstrual to regulate sadness (rather than anger) will be stronger for high than low emotional intensity.

4.2 Experiment 1 methods

4.2.1 Participants

An a priori G*Power analysis indicated a sample size of 46 was required to detect a small-to-moderate effect ($\eta_p^2 = 0.030$) in a two-way within-subjects analysis of variance (ANOVA) at 80% power. To account for invalid responses or suspicion of deception, a 20% attrition rate was adopted in line with past extrinsic studies [49]. Hence the target sample size for recruitment was a minimum of 58 participants ($58 \times 0.8 = 46$). We recruited 60 participants and upon exclusion the final sample of 53 participants (29 female, 24 male, M $_{age} = 43.49$ years, SD$_{age} = 14.20$ years) was sufficiently powered. Participants were recruited via the online crowd-source platform Prolific from English speaking countries only. Self-reported ethnicity was 84.91% White, 5.66% Black, 3.77% Asian, and 5.66% Other.

Seven participants were excluded from analyses. Two participants that had missing data on over 5% of trials were removed as this exceeds the heuristic that participants missing less than 5% of data often have a negligible impact on analyses [37]. In addition, the pre-registered exclusion criteria were administered, five participants failed the suspicion probe (i.e., realised that their partner was not real) and were removed.

4.2.2 Materials and procedure

All three studies were approved by the University of Sydney Human Research Ethics Committee (Project No.: 2022/239) in accordance with the National Health and Medical Research Council's (NHMRCs) National Statement on Ethical Conduct in Human Research (2007). Upon self-selecting into the study, they clicked on a link that redirected them to complete the following sequentially: (a) read the Participant Information Statement, (b) provide informed consent, (c) online surveys asking for demographic questions, (d) the experimental paradigm, (e) a suspicion probe, and (f) debriefing statement that explained their partner the 'target' was not human but a computer response. Participants completed the emotion regulation task using their own personal computers. Upon experiment completion, Prolific participants received a payment of £2.50. The task was programmed in JavaScript which involved utilising the jsPsych framework for developing web-based behavioural experiments.

4.2.3 Emotion regulation task

The emotion regulation task began with a cover story that participants were going to be paired with another participant and that each will be randomly assigned to either view negative images or to provide advice to their partner who is viewing the images. All participants were, in fact, assigned to the 'regulator' role and would provide advice to a non-existent partner. At the beginning of the emotion regulation task, participants were shown examples of images their partner (target) would view and the corresponding information about the image's intensity (high or low) and what emotion (sadness or anger) it elicits. This was to help participants better understand the types of emotions and emotional intensity the target might experience. The four images were sourced from the International Affective Picture System (IAPS) and

chosen to represent high and low intensity sadness and anger using the published ratings in Moyal et al. [27]. Refer to the Supplementary Materials (OSF) to view the emotion regulation task materials.

Participants then completed 100 trials. In each trial, the regulator was able to select one from two potential advice options to send to their partner, ostensibly *before* their partner saw the negative image. The two advice options they choose from are presented in Table 1. Ten options were used in total across the task. Five options represented different forms of reconstrual and another five options represented different forms of distraction. For each trial, participants were told what emotional intensity (low or high) and emotion type (sadness or anger) is commonly evoked by the image their partner will view next to inform their advice choice (though they themselves could not view the image). Across the 100 trials, each of 5 distraction options was pitted against each of the 5 reconstrual options equally for each of the conditions (high and low intensity, sadness and anger). All trials were presented in a randomised order.

Following the task, participants completed a two-item suspicion probe to identify if they believed the cover story about being matched with another person. Participants are asked to: (1) write down what they thought the study was about and (2) if they found anything odd about the study, to describe it in the text box.

4.3 Experiment 1 results

Experiment 1 hypotheses, design, sample size, data exclusions, and analyses were pre-registered prior to data collection (https://aspredicted.org/4eb87.pdf). Data and code are publicly available on OSF (https://osf.io/u4hsb/).

There was 1 departure from the pre-registration: 1) participants with *more* than 5% missing data across trials were removed, given it exceeds the heuristic that participants missing *less* than 5% of data often have a negligible impact on analyses [37]

A 2×2 within-subjects ANOVA was conducted to investigate the effect of emotional intensity (high and low) and emotion type (anger or sadness), see Fig. 1. The proportion of trials that a participant selected reconstrual (over distraction) was used as the dependent variable.

Averaged across emotional intensity, there was no significant difference in the extrinsic regulation strategy preference for reconstrual over distraction between the anger condition ($M = 0.49$, $SD = 0.36$) versus sadness condition ($M = 0.49$, $SD = 0.34$), $F(1,52) = 0.077$, $p = 0.782$, $\eta_p^2 < 0.001$. Therefore, Hypothesis 1 was not supported.

Averaged over emotion type, low-emotional intensity produced significantly greater extrinsic regulation strategy preference for using reconstrual over distraction ($M = 0.69$, $SD = 0.28$) compared to high-emotional intensity ($M = 0.29$, $SD = 0.20$), $F(1,52) = 65.160$, $p < 0.001$, $\eta_p^2 = 0.556$. Therefore, Hypothesis 2 was supported with a very large effect size.

There was no significant interaction between emotional intensity and emotional type conditions in influencing extrinsic regulation strategy choice, $F(1,52) = 0.041$, $p = 0.841$, $\eta_p^2 < 0.001$. Hence, Hypothesis 3 was not supported.

Table 1 Strategy options in experiments 1, 2 and 3

Strategy type	On-screen advice options
Distraction	• Do something to distract yourself from the image • Think of something neutral unrelated to the image • Think about something else other than the image • Shift your attention away from the image • Think about something that is emotionally neutral
Reconstrual	• Think about the meaning of the image in another way • Try to interpret the image from a different perspective • Reinterpret what is happening in the image • Interpret the image in a new way • Try to re-evaluate the image to change your reaction to it
Minimizing	• Think of it as only an image, it is not that important • Think about how the image does not affect you that much • Try to remain emotionally detached from the image • Attempt to distance yourself from the image • Try to view the images as not impacting you directly

Experiment 1 = distraction vs reconstrual, Experiment 2 = distraction vs minimizing, Experiment 3 = reconstrual vs minimizing

Strategy choices are based on prior literature operationalisations and instructions [3, 4, 30, 42, 44, 45, 55, 57]. Multiple advice options are presented to capture each strategy construct wholistically and reduce the repetitiveness of selection across trials, thereby encouraging continued engagement and reflection.

Fig. 1 Mean Preference for Reconstrual Over Distraction by Emotion Type (Anger Versus Sadness) and Intensity (Low Versus High). Higher scores indicate higher strategy preference for reconstrual over distraction. Error bars represent ± 1 standard error
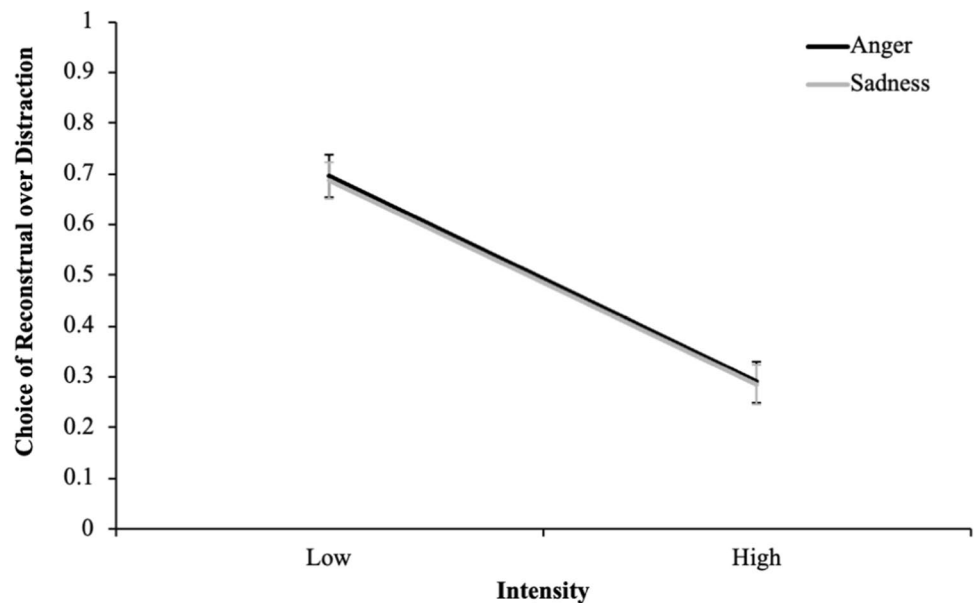
4.4 Experiment 1 discussion

The results of Experiment 1 suggest that emotional intensity, but not emotion type affect strategy choice when comparing distraction with reconstrual. This suggests that the regulator's decisions regarding which strategy to choose for the target is not impacted by the specific negative emotion that a stimulus might elicit. However, the large impact of intensity on strategy choice is consistent with the large amount of research on intrinsic regulation [4, 42] and a recent extrinsic study (Matthews, Webb, & Sheppes [24]). Replicating this intensity finding in a novel paradigm provides support for the paradigm as a research tool to examine how context-specific factors affect strategy choice.

5 Experiment 2

5.1 Experiment 2 introduction

Experiment 2 investigates whether the preference for reappraisal over distraction in low-intensity contexts generalises across reappraisal subtypes (i.e., beyond reconstrual to minimizing). Consistent with Experiment 1, we expect that regulators will prefer helping the target regulate via minimizing (the reappraisal counterpart to reconstrual) in low-emotional intensity and prefer distraction at higher intensities. Compared to distraction, minimizing is generally more cognitively effortful as a reappraisal strategy and has subtype specific cognitive costs of relying heavily on executive functioning to redirect the target's attention [44]. This results in minimizing becoming harder to employ at higher intensities. Hence, people prefer helping others regulate within high-intensity negative contexts via distraction to reduce early emotional processing before emotions reach a distressing level [24, 42].

Given Experiment 1 showed no evidence of an effect of emotion type on strategy selection, the subsequent studies will not examine emotion types further, especially as the effect of emotion is not expected to be notably different across subtypes in the same reappraisal category.

5.1.1 Hypotheses

H4. Compared to the low-emotional intensity condition, the high-emotional intensity condition will produce greater preference for distraction over minimizing.

5.2 Experiment 2 methods

5.2.1 Participants

Experiment 2 recruited participants in the same manner as Experiment 1. A power analysis suggested a sample size of 34 was needed to detect a medium-sized effect ($\eta_p^2 = 0.06$) in a one-way within-subjects ANOVA at 80% power.

Study 2 had 32 participants (18 female, 13 male, and 1 non-binary) aged between 20 and 55 years ($M_{age} = 34.59$ years, $SD_{age} = 9.70$). Of these participants, 59.38% indicated they were White, 21.88% Asian, 9.38% Mixed, 3.13% Black, and 6.25% Other.

An additional 8 participants undertook the study but were excluded from analyses. Of these participants, two had missing data on over 5% of trials [37]. Another 6 participants were excluded under the pre-registration criteria as they failed the suspicion probe.

5.2.2 Materials and procedure

Experiment 2 used a similar procedure to Experiment 1, however, as the number of conditions had halved, participants now completed 50 trials (25 low-intensity, 25 high-intensity) rather than 100. In addition, the 5 reconstrual options were replaced with 5 minimizing options, see Table 1. Upon completion, participants were reimbursed £1.50.

5.3 Experiment 2 results

The Experiment 2 design, hypothesis, sample size, data exclusions, and analyses were pre-registered (https://aspredicted.org/3zx9h.pdf). Data and code are available on OSF (https://osf.io/u4hsb/). There was one departure from the pre-registration: as with Experiment 1, participants missing over 5% of data were removed [37].

Extrinsic regulation strategy preference for minimizing over distraction did not differ significantly between low-emotional intensity trials ($M = 0.48$, $SD = 0.25$) compared to the high-emotional intensity trials ($M = 0.36$, $SD = 0.23$), $F(1,31) = 3.21$, $p = 0.083$, $\eta_p^2 = 0.094$, see Fig. 2. Therefore, Hypothesis 4 was not supported.

Fig. 2 Mean Preference for Minimizing Over Distraction by Emotional Intensity (Low Versus High). Higher scores indicate higher strategy preference for minimizing over distraction. Error bars represent ± 1 standard error
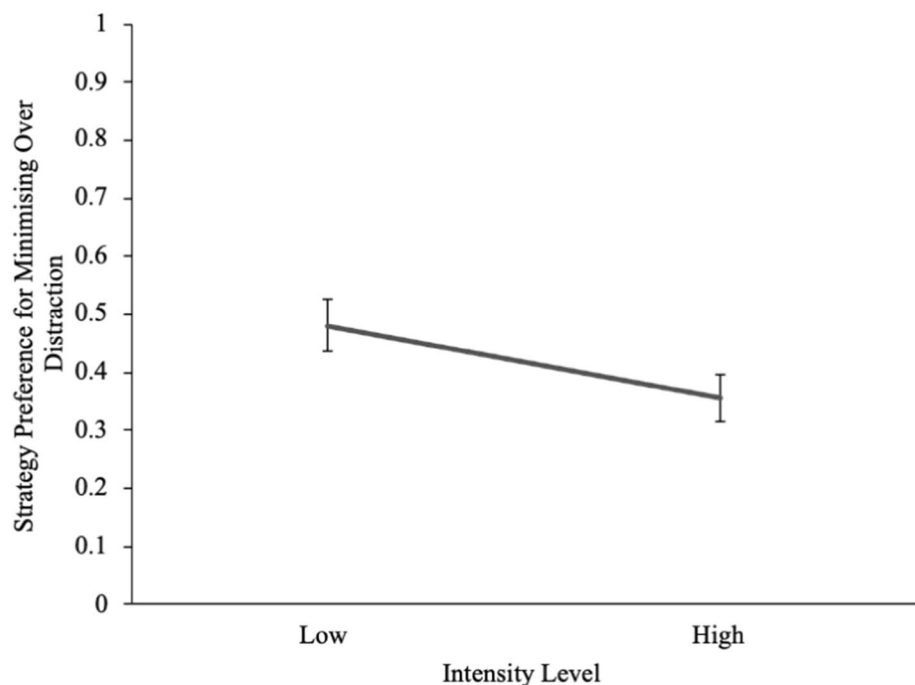
5.4 Experiment 2 discussion

Taken together, the results across Experiment 1 and Experiment 2 indicate that not all reappraisal subtypes are the same — reconstrual but *not* minimizing was preferred to distraction when regulating others' emotions in low-intensity situations.

Despite both reappraisal subtypes requiring cognitive change, distraction may share more similarities with minimizing than reconstrual. Distraction and minimizing do *not* require the regulator to orient the target towards the distressing aspects of the stimuli, whereas reconstrual does [10]. Minimizing reduces the stimuli's negativity by helping the target psychologically distance themselves from the stimuli without changing the affective content and distraction involves shifting attention away from the stimuli's emotional aspects [9]. Conversely, reconstrual requires the regulator to guide the target to emotionally and/or cognitively engage directly with the distressing stimuli then cognitively manipulate the source of distress to align with a new perspective [42]. The degree of cognitive and emotional distancing may explain why minimizing and distraction are more alike. Given the differential preference of reconstrual and not minimizing over distraction for low-intensity situations, it is important to engage in a novel comparison of these reappraisal subtypes in extrinsic regulation settings.

However, it is important to note that the hypothesised direction of effect is as predicted (with a moderate effect size, $\eta_p^2 = 0.094$). The sample size for Experiment 2 was selected in anticipation of a moderate effect given the large effect of intensity in Experiment 1, therefore it may be that the effect of intensity on strategy selection is more pronounced in reconstrual vs distraction compared to minimizing vs distraction.

6 Experiment 3

6.1 Experiment 3 introduction

The existing reappraisal research has mostly focused on reconstrual [41], neglecting the minimizing subtype. Experiment 3 explores the novel comparison of reconstrual and minimizing, by investigating which subtype is preferred for extrinsic regulation across emotional intensities. Within the scarce literature on nuanced reappraisal, Shiota and Levenson [45] found minimizing led to stronger reductions in subjective negative emotional responding than reconstrual for upsetting videos. Experiment 1 found reconstrual is preferred in low intensities, whereas Experiment 2 found minimizing and distraction preference was not significantly different across intensities. Thus it is predicted that reconstrual rather than minimizing may be preferred in lower intensities.

6.1.1 Hypotheses

H5. Compared to the lower emotional intensity condition, the higher emotional intensity condition will elicit greater preference for minimizing over reconstrual.

6.2 Experiment 3 methods

6.2.1 Participants

Recruitment was in the same manner as the previous experiments. A power analysis indicated a sample size of 67 was needed to detect a small-to-moderate effect ($\eta_p^2 = 0.03$) in a one-way within-subjects ANOVA with two levels at 80% power. Oversampling based on a 20% attrition rate from Experiment 2 was performed. Experiment 3 had 65 participants (32 male, 30 female, and 3 non-binary; $M_{age} = 34.40$ years, $SD_{age} = 13.66$). Of these participants, 63.08% were White, 24.62% Asian, 4.62% Black, 3.08% Mixed, and 4.62% Other.

19 participants were excluded from analyses due to the pre-registered exclusion criteria (i.e., failed suspicion probe [$n = 15$] or had missing data for over 5% of trials [$n = 4$]).

6.2.2 Materials and procedure

The procedure and materials were the same as Experiment 2 except participants now choose between advice options representing reconstrual and minimizing (see Table 1). Upon completion, participants were reimbursed £1.50.

6.3 Experiment 3 results

The preregistration is available online (https://aspredicted.org/z2en5.pdf). The data and code are available on the OSF (https://osf.io/u4hsb/). There were no departures from the pre-registration.

Extrinsic regulation strategy preference for reconstrual over minimizing was significantly higher for low-emotional intensity ($M = 0.60$, $SD = 0.29$) compared to the high-emotional intensity condition ($M = 0.36$, $SD = 0.29$), $F(1,64) = 24.51$, $p < 0.001$, $\eta_p^2 = 0.277$, see Fig. 3. Therefore, Hypothesis 4 was strongly supported with a large effect size.

6.4 Experiment 3 discussion

This finding suggests there is a large effect of intensity on reappraisal subtype preferences in extrinsic regulation. Despite both strategies representing cognitive change, reconstrual enables individuals to engage in benefit-finding which is easier to execute in low-emotion intensity as creating re-interpretations to supersede initial appraisals is too cognitively demanding in high-intensity contexts [31, 42]. Conversely, minimizing may be selected more frequently for high-intensity conditions where emotions are at high arousal and difficult to positively reinterpret [12]. This sheds light on prior experimental findings on reappraisal, suggesting that conclusions about reappraisal may be more applicable to reconstrual specifically and may not necessarily translate to other subtypes (e.g. minimizing) which require lower cognitive costs and emotional engagement with the target and stimuli.

7 General discussion

The present research contributes to the nascent extrinsic regulation literature on the strategies people prefer to use when regulating other's emotions across emotional contexts. The data strongly supported hypothesis 1, replicating a recent extrinsic study by Matthews, Webb and Sheppes [24]; people prefer to help others regulate by using reconstrual over distraction in low-emotional intensity situations but prefer distraction in high-intensities. Contrary to expectations, hypotheses 2 and 3 were not supported. The specific emotion (anger or sadness) and whether it varied across emotional intensities did not influence strategy preference. Surprisingly not all reappraisal subtypes are preferred over distraction in high intensities. Hypothesis 4 was not supported, unlike reconstrual, the minimizing subtype is not preferred over

Fig. 3 Mean Preference for Reconstrual Over Minimizing for Low Versus High Emotional Intensity. Higher scores represent higher strategy preference for reconstrual over minimizing. Error bars are ± 1 standard error
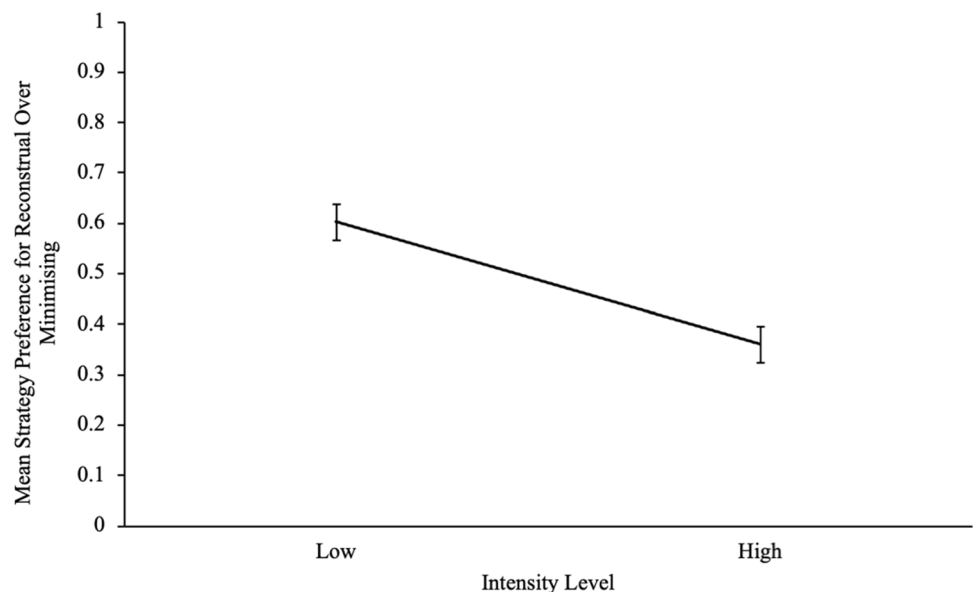
distraction in high intensities. There was substantial support for hypothesis 5 as regulators preferred helping targets feel better using minimizing over reconstrual for high-intensity contexts. Our highly exploratory findings are interpreted below within the foundational emotion regulation theories.

7.1 Emotion type

We failed to support the hypothesis that emotion type (sadness and anger) would produce differences in strategy selection, when comparing reconstrual and distraction. These findings contradict studies that found strategy usage was differentiated across specific emotions in addition to having an interactive effect with emotional intensity; where reconstrual was used more for sadness (even at high-intensities) [8] and distraction was preferred for anger [34]. Those findings are, however, focused on intrinsic emotion regulation and therefore may not translate to extrinsic contexts. Given the regulator in our experiment is not experiencing the emotion themselves, or the associated impairments of anger such as reduced information processing abilities that would make reconstrual more difficult [35].

Notably, our findings corroborate recent *extrinsic emotion regulation* research conducted by Tanna and MacCann [49] on discrete emotions,whereby anger or anxiety experienced by a target did not impact a regulator's preference of strategies including reconstrual and distraction. It appears emotion type may be an influential contextual factor for intrinsic regulation but not extrinsic regulation. In intrinsic settings the person wrestles with experiencing the qualities of the emotion themselves whilst also selecting a strategy with reduced emotional and cognitive resources available. Conversely, in extrinsic contexts the regulator is not clouded by features of a negative emotion and can more objectively select strategies to aid the target. When considering the overall scarcity of extrinsic emotion regulation research exploring discrete emotions, future studies should continue to consider a wider range of nuanced negative emotions to contribute to a deeper understanding of extrinsic regulation [17].

Another possible explanation is that regulators were not experiencing the target's emotional expression directly (i.e., the target cannot reply with messages conveying the anger or sadness they felt after viewing images). The tightly-controlled experimental format of an online paradigm may have increased the psychological distance between the regulator and target; leading regulators to underestimate the visceral impact of specific emotions on the target [24]. For example, the regulator does not experience the threat arising from the target's anger (e.g. social rejection or potential harm) that typically drives distraction to de-escalate anger [48] or the preference of reconstrual given sadness-related crying in the target elicits high-engagement social support from regulators [8]. Since we are interested in contextual factors, the images presented to the 'target' indicated whether they were likely to elicit sadness or anger. Hence, we manipulated the emotional *context* rather than the target's emotional *state*. Overall, Experiment 1 advances literature on context-specific regulation by demonstrating emotion type is not necessarily an important factor in determining extrinsic regulation strategy choice.

7.2 Emotion intensity

The large preference for distraction over reconstrual in high-emotional intensity might be explained by its fast-activity effectiveness and low cognitive burden for the target. Distraction has the advantage of its immediate efficacy which is robust across intensities [26]. It is less cognitively intensive than reappraisal subtypes, as it simply dilutes the target's mental representation of a trigger by flooding their working memory with non-emotional input that is independent from the trigger's content [43]. High-intensity events deplete cognitive resources, hence effortful cognitive change strategies become difficult to use [24].

When extending this comparison beyond reconstrual to minimizing, we found that minimizing is preferred to the same extent as distraction and more than reconstrual in high intensities. Hence, participants may believe that minimizing is considered a good strategy fit for high-intensity contexts. This is surprising given little is known about this neglected reappraisal subtype. Both distraction and minimizing benefit from the effectiveness of disengaging from emotion-laden information early in the emotion regulation process before the emotional content can accumulate in strength for later processing [40]. Moreover, minimizing is more effective in circumstances where emotions can possibly become overwhelming (i.e., high-emotional intensity) or when there is minimal possibility of developing positive emotions (e.g., positively reinterpreting an emotionally intense image via reconstrual) [45].

Notably, there was a large effect found for the regulator's preference of minimizing over reconstrual in high-emotional intensities. When undergoing a *cost–benefit analysis*, regulator's preference for minimizing over reconstrual in high-intensities may be driven by its lower cognitive demand, and robustness to intensity [32]. Although minimizing uses

executive functioning processes to establish psychological distance and reduce the intensity of the emotion elicited by the stimuli, it is still less cognitively taxing than reconstrual [9]. Since reconstrual requires overriding initial emotional appraisals before engaging in effortful semantic and cognitive manipulation to create alternative interpretations [9]. The cognitive change processes underlying minimizing are less complex as they are not stimulus-dependent, unlike the direct reframing of a trigger's features in reconstrual [32].

7.3 Mechanisms

While the current study did not seek to understand *why* people choose different strategies for different emotional intensity situations, there are a number of theoretical reasons to suspect that it is due to the perceived efficacy of each strategy within each context.

The present research offers new insights into what contextual elements and cognitive processes may influence extrinsic emotion regulation choice. Previous emotion regulation literature has proposed that it is the cognitive cost for the *regulator* when generating a reinterpretation that reduces reconstrual preference in high intensities [43]. However, in our experimental paradigm, the cognitive and emotional effort of the regulator is controlled for as the strategy prompts are pre-generated by the experimenter. Hence our results dispute the hypothesis that strategy selection is primarily guided by the effort for the regulator.

Instead, we argue that our findings support the functional approach. Models such as the EPM argue that a *cost–benefit analysis* process underlies the strategy selection stage, whereby the regulator weighs the benefits and costs of each strategy and selects one based on its perceived efficacy and effort for the target. This coincides with the *functional approach* as the regulator selects the strategy they perceive as the most effective for altering emotions in a desired trajectory [46]. Consider the example where there is a high negative emotional-intensity context, a regulator will account for the benefits of attentional deployment strategies such as distraction which are more effective and efficient at hedonic regulation compared to cognitive change strategies which are cognitively onerous. This cognitive cost overshadows the benefits of reappraisal in higher intensities. Although reappraisal subtypes have adaptive benefits for long term coping by requiring meaningful processing of the stimuli [32], these benefits cannot be reaped if the target is unlikely to have the cognitive capacity to effectively adopt these reappraisal subtypes at higher intensities. Hence, the regulator selects distraction to help the target in line with the functional approach as it is the most effective strategy for the target when they have limited cognitive processing abilities in high emotional intensities.

7.4 Differentiating reappraisal subtypes

Our research presents clear evidence that the emotion regulation field cannot simply reduce reappraisal to reconstrual. A recent meta-analysis underscored the need for emotion regulation research to converge on unified terminology and develop a context-specific understanding of strategy usage [32]. Previous studies have used the broad label of reappraisal, resulting in misconceptions that reappraisal findings are generalisable across all subtypes. The present research addresses this by undertaking a theoretically challenging but necessary task. We differentiated and synthesised the sparse fragmented studies on lesser-known reappraisal subtypes based on their conceptualisation and operationalisations. We also identified if prior studies on 'reappraisal' were simply restricted to reconstrual. Our findings extend upon intrinsic studies on minimizing to establish its relative preference against distraction and reconstrual in extrinsic regulation. Hence, future research should continue classifying this specific subtype as *minimizing* (and label the reinterpretation subtype as *reconstrual*) to avoid further conceptual confounds and facilitate a deeper understanding of the reappraisal strategy subtypes.

7.5 Practical applications

There are many psychological domains interested in how people regulate other's emotions under contexts that vary in emotional intensity. Our findings are insightful and broadly relevant across clinical applications (e.g., couples therapy where partners are an adaptive source of extrinsic regulation), and organisational settings (e.g., high-intensity workplaces and leadership studies). Please see an overview of the potential applications below in Table 2.

Table 2 Potential applications of our findings across psychological domains

Area of psychology	What our results suggest for these domains
Clinical	
Cognitive behavioural therapy (CBT)	• Cognitive restructuring: reframing an emotional event adaptively to alter its emotional impact[a, b] • This key emotion regulation strategy in CBT resembles the reconstrual subtype[c] • Extrinsic: clinicians help clients build adaptive reconstrual ability by helping them reframe low-intensity events[d]
Couples	• Extrinsic reconstrual: people discuss with their partner to gain a new positive and adaptive interpretation of an event[e] • Benefits: reduced symptoms for depression and adjustment disorder for females in relationships[f] • Negatives: cognitively difficult to reinterpret high-intensity experiences[f], reconstrual and minimizing a partner's aggressive behaviour may be maladaptive in encouraging one to stay in abusive situations[g] • Minimizing based interventions: reduce anger and distress elicited by significant relationship disagreements[h]
Organisational	• In high-intensity work crises, leaders should not help subordinates via reconstrual or minimizing to avoid implying[i]: • leadership is downplaying their work strain and that they should better manage their own stress • Leadership development courses: coach managers to use strategies differentially to help employees regulate emotions depending on the intensity of workplace issues[j]
High-intensity occupations	• Police-officers: helped each other reinterpret events to feel better and gain different adaptive perspectives on the job[k]

[a]Clark [7], [b]Jamieson et al. [19], [c]Forkmann et al. [13], [d]Messina et al. [25], [e]Tosyali and Harma [51], [f]Horn and Maercker [18], [g]Arriaga et al. [5], [h]Finkel et al. [11], [i]Thiel et al. [50], [j]Richard [33], [k]Gagnon and Monties [14]

7.6 Limitations and future research

While the experimental paradigm used here allows for greater control over extraneous variables and the assertion of stronger causal claims, it is not perfectly analogous to real-world extrinsic emotion regulation, this may limit the generalisability of our findings. For example, since the expected emotion regulation 'target' was a stranger, it is unlikely that regulators would typically have limited information about the target in real-word situations to inform their strategy choice. Further research using survey and experience-sampling may help confirm these findings in everyday emotion regulation.

In addition, participants regulated the target's emotions by sending word-based advice. This may limit the generalisability of results to daily interactions where regulators can help targets feel better through situation modification (e.g. removing upsetting stimuli), affectionate touch, or via spoken dialogue [28]. Future research would benefit from using this experimental paradigm and asking regulators to record video and/or auditory responses of their regulatory attempts for the 'target' to watch, to approximate everyday regulation and extend the study to strategy *implementation*.

8 Conclusion

Emerging emotion regulation research has suggested strategy preferences are context specific. The present research demonstrates that emotional intensity rather than the specific emotion type has a strong impact on extrinsic strategy preference. Specifically, people prefer helping others feel better in high-intensity contexts via minimizing or distraction over reconstrual. Importantly, we found that not all reappraisal subtypes are preferred equally. We argue that this may be due to context-specific beliefs about the effectiveness of that strategy. Future research should explicitly test these underlying mechanisms driving strategy preference and their effectiveness.

KD: Conceptualisation (equal), Data Curation (supporting), Formal Analysis (supporting), Methodology (equal), Resources (supporting), Software (lead), Supervision (Supporting), Validation (supporting), writing - review and editing (supporting)

CM: Conceptualisation (equal), Data Curation (supporting), Funding acquisition (Lead), Methodology (equal), Project administration (Lead), Resources (Lead), Supervision (Lead) Validation (supporting), Visualisation (supporting), writing - review and editing (supporting)

Data availability The corresponding data, study materials, and code for all three studies are publicly available on OSF (https://osf.io/u4hsb/).

Declarations

Competing interests The authors declare no competing interests.

References

1. Abraham D. Database of picture-based cognitive reappraisal experiments: analyses of trial- level factors doctoral dissertation University of Denver. Michigan: ProQuest One Academic; 2021.
2. Aldao A, Mennin DS. Paradoxical cardiovascular effects of implementing adaptive emotion regulation strategies in generalized anxiety disorder. Behav Res Ther. 2012;50(2):122–30. https://doi.org/10.1016/j.brat.2011.12.004.
3. Aldao A, Nolen-Hoeksema S. One versus many: capturing the use of multiple emotion regulation strategies in response to an emotion-eliciting stimulus. Cogn Emot. 2013;27(4):753–60.
4. Aleshire B. Emotion regulation strategy sequences: the regulation of anger. Michigan: ProQuest One Academic; 2020.
5. Arriaga XB, Capezza NM, Goodfriend W, Allsop KE. The invisible harm of downplaying a romantic partner's aggression. Curr Dir Psychol Sci. 2018;27(4):275–80.
6. Bujor L, Turliuc MN. The personality structure in the emotion regulation of sadness and anger. Personality Individ Differ. 2020;162: 109999. https://doi.org/10.1016/j.paid.2020.109999.
7. Clark DA. Cognitive reappraisal. Cognit Behav Practice. 2022;29(3):564–6. https://doi.org/10.1016/j.cbpra.2022.02.018.
8. Dixon-Gordon KL, Aldao A, De Los Reyes A. Emotion regulation in context: examining the spontaneous use of strategies across emotional intensity and type of emotion. Personality Individ Differ. 2015;86:271–6. https://doi.org/10.1016/j.paid.2015.06.011.
9. Dore BP. Mechanisms of positive and minimizing reappraisal Doctoral thesis, Columbia University. Acad Commons. 2016. https://doi.org/10.7916/D86Q1XK9.
10. Dörfel D, Lamke J-P, Hummel F, Wagner U, Erk S, Walter H. Common and differential neural networks of emotion regulation by detachment, reinterpretation, distraction, and expressive suppression: a comparative fMRI investigation. Neuroimage. 2014;101:298–309.
11. Finkel EJ, Slotter EB, Luchies LB, Walton GM, Gross JJ. A brief intervention to promote conflict reappraisal preserves marital quality over time. Psychol Sci. 2013;24(8):1595–601. https://doi.org/10.1177/0956797612474938.
12. Ford BQ, Troy AS. Reappraisal reconsidered: a closer look at the costs of an acclaimed emotion-regulation strategy. Curr Dir Psychol Sci. 2019;28(2):195–203.
13. Forkmann T, Scherer A, Pawelzik M, Mainz V, Drueke B, Boecker M, Gauggel S. Does cognitive behavior therapy alter emotion regulation in inpatients with a depressive disorder? Psychol Res Behav Manag. 2014;7:147–53. https://doi.org/10.2147/PRBM.S59421.
14. Gagnon S, Monties V. Interpersonal emotion regulation strategies: enabling flexibility in high-stress work environments. J Organ Behav. 2022. https://doi.org/10.1002/job.2660.
15. Gross JJ. Emotion regulation: current status and future prospects. Psychol Inq. 2015;26(1):1–26. https://doi.org/10.1080/1047840X.2014.940781.
16. Gross JJ, Jazaieri H. Emotion, emotion regulation, and psychopathology: an affective science perspective. Clinical psychological science. 2014;2(4):387–401.
17. Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J Pers Soc Psychol. 2003;85(2):348–62. https://doi.org/10.1037/0022-3514.85.2.348.
18. Horn AB, Maercker A. Intra—and interpersonal emotion regulation and adjustment symptoms in couples: the role of co-brooding and co-reappraisal. BMC Psychol. 2016;4(1):51. https://doi.org/10.1186/s40359-016-0159-7.
19. Jamieson JP, Mendes WB, Nock MK. improving acute stress responses: the power of reappraisal. Curr Dir Psychol Sci. 2013;22(1):51–6. https://doi.org/10.1177/0963721412461500.
20. Klein SR, Renshaw KD, Curby TW. Emotion regulation and perceptions of hostile and constructive criticism in romantic relationships. Behav Ther. 2016;47(2):143–54. https://doi.org/10.1016/j.beth.2015.10.007.
21. Kross E, Ayduk O. Making meaning out of negative experiences by self-distancing. Curr Dir Psychol Sci. 2011;20(3):187–91. https://doi.org/10.1177/0963721411408883.
22. Liang Y, Huo M, Kennison R, Zhou R. The role of cognitive control in older adult cognitive reappraisal: detached and positive reappraisal. Front Behav Neurosci. 2017. https://doi.org/10.3389/fnbeh.2017.00027.

23. Matthews M, Webb TL, Shafir R, Snow M, Sheppes G. Identifying the determinants of emotion regulation choice: a systematic review with meta-analysis. Cogn Emot. 2021;35(6):1056–84. https://doi.org/10.1080/02699931.2021.1945538.

24. Matthews M, Webb TL, Sheppes G. Do people choose the same strategies to regulate other people's emotions as they choose to regulate their own? Emotion. 2021. https://doi.org/10.1037/emo0001008.

25. Messina I, Calvo V, Masaro C, Ghedin S, Marogna C. Interpersonal emotion regulation: from research to group therapy. Front Psychol. 2021. https://doi.org/10.3389/fpsyg.2021.636919.

26. Moodie CA, Suri G, Goerlitz DS, Mateen MA, Sheppes G, McRae K, Lakhan-Pal S, Thiruchselvam R, Gross JJ. The neural bases of cognitive emotion regulation: the roles of strategy and intensity. Cogn Affect Behav Neurosci. 2020;20(2):387–407.

27. Moyal N, Henik A, Anholt GE. Categorized affective pictures database (CAP-D). J Cognit. 2018. https://doi.org/10.5334/joc.47.

28. Nozaki Y, Mikolajczak M. Extrinsic emotion regulation. Emotion. 2020;20(1):10–5. https://doi.org/10.1037/emo0000636.

29. Ochsner KN, Ray RD, Cooper JC, Robertson ER, Chopra S, Gabrieli JD, Gross JJ. For better or for worse: neural systems supporting the cognitive down-and up-regulation of negative emotion. Neuroimage. 2004;23(2):483–99.

30. Olderbak, S., Uusberg, A., MacCann, C., Pollak, K. M., & Gross, J. J. (2022). The Process model of emotion regulation questionnaire: assessing individual differences in strategy stage and orientation. In Prep.

31. Ortner CNM, Marie MS, Corno D. Cognitive costs of reappraisal depend on both emotional stimulus intensity and individual differences in habitual reappraisal. PLoS ONE. 2016;11(12):e0167253–e0167253. https://doi.org/10.1371/journal.pone.0167253.

32. Powers JP, LaBar KS. Regulating emotion through distancing: a taxonomy, neurocognitive model, and supporting meta-analysis. Neurosci Biobehav Rev. 2019;96:155–73.

33. Richard EM. Developing employee resilience: the role of leader-facilitated emotion management. Adv Dev Hum Resour. 2020;22(4):387–403. https://doi.org/10.1177/1523422320949143.

34. Rivers SE, Brackett MA, Katulak NA, Salovey P. Regulating anger and sadness: an exploration of discrete emotions in emotion regulation. J Happiness Stud. 2007;8(3):393–427. https://doi.org/10.1007/s10902-006-9017-2.

35. Roberton T, Daffern M, Bucks RS. Emotion regulation and aggression. Aggress Violent Beh. 2012;17(1):72–82.

36. Rusu PP, Bodenmann G, Kayser K. Cognitive emotion regulation and positive dyadic outcomes in married couples. J Soc Pers Relat. 2019;36(1):359–76. https://doi.org/10.1177/0265407517751664.

37. Schafer JL. Multiple imputation: a primer. Stat Methods Med Res. 1999;8(1):3–15.

38. Shafir R, Schwartz N, Blechert J, Sheppes G. Emotional intensity influences pre-implementation and implementation of distraction and reappraisal. Soc Cognit Affective Neurosci. 2015;10(10):1329–37.

39. Sheppes G, Gross JJ. Emotion regulation effectiveness: What works when. Handb Psychol. 2012;2:391–406.

40. Sheppes G, Levin Z. Emotion regulation choice: selecting between cognitive regulation strategies to control emotion. Front Hum Neurosci. 2013;7:179–179. https://doi.org/10.3389/fnhum.2013.00179.

41. Sheppes G, Meiran N. Better late than never? On the dynamics of online regulation of sadness using distraction and cognitive reappraisal. Pers Soc Psychol Bull. 2007;33(11):1518–32. https://doi.org/10.1177/0146167207305537.

42. Sheppes G, Scheibe S, Suri G, Gross JJ. Emotion-regulation choice. Psychol Sci. 2011;22(11):1391–6.

43. Sheppes G, Scheibe S, Suri G, Radu P, Blechert J, Gross JJ. Emotion regulation choice: a conceptual framework and supporting evidence. J Exp Psychol Gen. 2014;143(1):163–81. https://doi.org/10.1037/a0030831.

44. Shiota MN, Levenson RW. Effects of aging on experimentally instructed detached reappraisal, positive reappraisal, and emotional behavior suppression. Psychol Aging. 2009;24(4):890–900. https://doi.org/10.1037/a0017896.

45. Shiota MN, Levenson RW. Turn down the volume or change the channel? emotional effects of detached versus positive reappraisal. J Pers Soc Psychol. 2012;103(3):416–29. https://doi.org/10.1037/a0029208.

46. Shiota MN, Neufeld SL, Danvers AF, Osborne EA, Sng O, Yee CI. Positive emotion differentiation: a functional approach. Soc Pers Psychol Compass. 2014;8(3):104–17. https://doi.org/10.1111/spc3.12092.

47. Szasz PL, Coman M, Curtiss J, Carpenter JK, Hofmann SG. Use of multiple regulation strategies in spontaneous emotion regulation. Int J Cogn Ther. 2018;11(3):249–61. https://doi.org/10.1007/s41811-018-0026-9.

48. Szasz PL, Szentagotai A, Hofmann SG. The effect of emotion regulation strategies on anger. Behav Res Ther. 2011;49(2):114–9. https://doi.org/10.1016/j.brat.2010.11.011.

49. Tanna VJ, MacCann C. I know you so I will regulate you: closeness but not target's emotion type affects all stages of extrinsic emotion regulation. Emotion. 2022. https://doi.org/10.1037/emo0001073.

50. Thiel CE, Griffith JA, Hardy JH, Peterson DR, Connelly S. Let's look at this another way: how supervisors can help subordinates manage the threat of relationship conflict. J Leadership Org Studies. 2018;25(3):368–80. https://doi.org/10.1177/1548051817750545.

51. Tosyali AF, Harma M. The role of co-regulation of stress in the relationship between perceived partner responsiveness and binge eating: a dyadic analysis. Int J Psychol. 2021;56(3):435–43. https://doi.org/10.1002/ijop.12712.

52. Troy AS, Shallcross AJ, Brunner A, Friedman R, Jones MC. Cognitive reappraisal and acceptance: effects on emotion, physiology, and perceived cognitive costs. Emotion. 2018;18(1):58.

53. Uhrecký B, Gurňáková J, Marcinechová D. 'We ought to be professionals': strategies of intrapersonal and interpersonal emotion regulation of emergency medical services professionals in confrontation with the death of a newborn in simulated task. Qual Health Res. 2021;31(13):2364–77. https://doi.org/10.1177/10497323211037644.

54. Uusberg A, Taxer JL, Yih J, Uusberg H, Gross JJ. Reappraising Reappraisal. Emot Rev. 2019;11(4):267–82. https://doi.org/10.1177/1754073919862617.

55. Uusberg A, Yih J, Taxer JL, Christ NM, Toms T, Uusberg H, Gross J. Appraisal shifts during reappraisal. Emotion. 2021. https://doi.org/10.3219/osf.io/ar4kj.

56. Webb TL, Miles E, Sheeran P. Dealing with feeling: a meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. Psychol Bull. 2012;138(4):775–808. https://doi.org/10.1037/a0027600.

57. Zhao Y, Waugh CE, Kammrath L, Wang Q. Comparing the affective and social effects of positive reappraisal and minimising reappraisal. Cognit Emotion. 2021. https://doi.org/10.1080/02699931.2021.2014787.

58. Zimmermann P, Iwanski A. Emotion regulation from early adolescence to emerging adulthood and middle adulthood: Age differences, gender differences, and emotion-specific developmental variations. Int J Behav Dev. 2014;38(2):182–94.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.